



SPACE LAUNCH SYSTEM

SEPTEMBER 2018

ENGINE TESTS ON SCHEDULE

SLS RIGHT ON SCHEDULE WITH RS-25 TESTS



Four RS-25 engines will power SLS at launch, providing 2 million pounds of combined thrust. The engine tests at Stennis Space Center are scheduled to continue into 2019.


The SLS program has successfully completed two more scheduled RS-25 rocket engine tests at Stennis Space Center in Bay St. Louis, Mississippi. On Sept. 25, the third hot fire of RS-25 developmental engine 0525 met all test objectives and featured several key elements, most notably an acceptance test of an engine flight controller for use by the SLS rocket. The hot fire also represented the seventh test of a 3D-printed pogo accumulator and the third test of a main combustion chamber fabricated using a bonding technique designed to save time and money. The flight controller units are a key component of

the RS-25 engine, serving as the “brain” to help it communicate with the rocket and to provide control of its operation and internal health diagnostics. The 3D-printed pogo accumulator assembly dampens potential propellant pressure oscillations that can cause a rocket to become unstable in flight.

The first test was conducted Aug. 14. The second hot fire test on the RS-25 engine was conducted Sept. 6. Tests are expected to continue into 2019.

Read the full story: [go.nasa.gov/20YAtFS](https://www.nasa.gov/20YAtFS)

SMART MANUFACTURING POWERS NEW SLS ENGINES



The redesigned main combustion chamber, one of the most complex and critical components for SLS engine operations, has performed well under testing.

NASA redesigned and tested key components for the RS-25 engine that powers the agency's new deep space rocket, SLS, by incorporating modern manufacturing techniques that significantly reduce both cost and fabrication time.

The redesigned main combustion chamber, which is the heart of the engine, has performed well during two tests in flight-like conditions. During the tests, temperatures reached 6,000 degrees Fahrenheit and the part experienced 3,000 pounds of pressure as the engine fired up in a test stand at Stennis Space Center in Bay St. Louis, Mississippi. When SLS launches, four RS-25 engines will produce two million pounds of thrust to help send SLS to space for missions to the Moon and beyond.

The RS-25 was proven during the Space Shuttle Program and has been updated with new controllers and nozzle insulation for its job with SLS. Currently, the SLS Program has 16 engines in its inventory from the Space Shuttle Program, enough for four flights. Engines for later flights are being built by SLS engines prime contractor Aerojet Rocketdyne at its factory in Canoga Park, California.

Read the full story: [go.nasa.gov/2Dc36xK](https://www.nasa.gov/2Dc36xK)

AEROJET ROCKETDYNE NAMED MARSHALL PRIME CONTRACTOR OF THE YEAR

Aerojet Rocketdyne, which is building RS-25 engines for SLS, was named Marshall Space Flight Center's Large Business Prime Contractor of the Year for support of the Small Business Subcontracting Programs under Marshall's RS-25 Production Restart contract. The Sacramento, California-based company, along with protégé company ICO Rally of Palo Alto, California, was also awarded the Mentor-Protégé Agreement of the Year for their support of the engine contract.

The awards, presented during the Marshall Small Business Alliance Meeting at the U.S. Space & Rocket Center in Huntsville, Alabama, recognize leadership in the aerospace business community and sustained achievement. Established in 2007 and sponsored by Marshall's Office of Procurement and Small Business Office, the Alliance helps small businesses pursue NASA procurement and subcontracting opportunities.

Read the full story: go.nasa.gov/20lwOMa



Bill Gerstenmaier, NASA Associate Administrator for the Human Exploration and Operations Directorate, recently spoke to employees at Aerojet Rocketdyne in California. Aerojet Rocketdyne is building RS-25 engines for SLS.

SLS ON THE ROAD

A VIRTUAL SLS LAUNCH EXPERIENCE



Professionals who work in the science center and museum industries got a chance to experience a rocket launch, thanks to the SLS team's virtual reality exhibit at the Association of Science and Technology Center's annual conference in Hartford, Connecticut. More than 1,200 people attended the conference, hosted by the Connecticut Science Center.

LEARNING ABOUT FUTURE PAYLOADS



SLS Spacecraft Payload Integration and Evolution (SPIE) Office Deputy Manager Andy Schorr spoke at the American Institute of Aeronautics and Astronautics (AIAA) Space 2018 conference where he updated attendees about the payload options for SLS.

WHAT'S NEW IN SLS SOCIAL MEDIA



ROCKET SCIENCE IN 60 SECONDS

Rocket Science in 60 Seconds gives an inside look at work being done at NASA to explore deep space. In this episode, SLS Flight Operations Manager Jennifer Vollmer takes you inside the SLS Engineering Support Center located in Marshall Space Flight Center's Huntsville Operations Support Center.

Watch the latest Rocket Science video here:
bit.ly/2xxOvHH



I AM BUILDING SLS: JONATHAN PAHED

From hiking to biking to running to rock climbing, Jonathan Pahed loves a good adventure. He says his greatest adventure so far is working on engines for NASA's deep space rocket, SLS. As the lead engineer for the RS-25 main combustion chamber, he is focused on new and improved ways of building the combustion chamber to save time and reduce costs. The main combustion chamber is one of the most critical and complex parts of the engine because it is where the entire thrust of the engine begins. Inside the chamber, the fuel and oxidizer mix and combust, then the high-pressure gas is accelerated out of the nozzle, producing the thrust that powers the rocket.

Read the full story: go.nasa.gov/2NqSM9M

SLS CHIEF ENGINEER WINS NATIONAL AWARD

SLS Chief Engineer Garry Lyles recently received the 2018 American Association of Aeronautics and Astronautics (AIAA) George M. Low Award for Space Transportation. AIAA cited Lyles' "visionary leadership" in the development of NASA's SLS rocket.

"Building the world's most powerful rocket has been challenging," Lyles said. "There is tremendous complexity in how all the pieces and parts of the Space Launch System work together. What I've found is a lot of what makes the rocket work is not just the physics. It's the people. I feel like this award is for the whole SLS team."

Lyles has served as the SLS chief engineer at NASA's Marshall Space Flight Center in Huntsville, Alabama, since the program's beginning in the fall of 2011, guiding the rocket through both its preliminary and critical design reviews.

Read the full story: go.nasa.gov/2xEHKDQ



SPACEFLIGHT PARTNERS: *University of Hawaii at Manoa*

NUMBER OF EMPLOYEES: 6

LOCATION: *Honolulu, Hawaii*

WHAT THEY DO FOR SLS:

Mission Operations & Integration prime contractor Teledyne Brown Engineering entered into an agreement with The University of Hawaii at Manoa to assist in the development of SLS vehicle command/telemetry database development, operations, product/documentation and configuration management. This effort includes development of products to support SLS flight controller training, autonomous operations, secondary payloads and launch commit criteria. The students receive training in a range of skills supporting payload and system integration.



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OCTOBER

Moving the pathfinder

Intertank avionics testing complete

The rocket's forward join